



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/796,481 | 03/09/2004 | Samir F. Bassily | PD-01-439 | 2295 |
| 22462 | 7590 | 10/17/2005 | EXAMINER | |
| GATES & COOPER LLP HOWARD HUGHES CENTER 6701 CENTER DRIVE WEST, SUITE 1050 LOS ANGELES, CA 90045 | | | LE, HOANGANH T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2821 | |

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|----------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/796,481 | BASSILY, SAMIR F. | |
| | Examiner HoangAnh T. Le | Art Unit 2821 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 9/6/05.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) 21-22 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Hoanganh Le
Primary Examiner

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. The amendment filed on September 06, 2005 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 7, 14-17, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Fraser (the US Patent No. 6,384,516).

The Fraser reference teaches in figure 2 a direct radiating array (DRA), comprising: a plurality of elements 120, collectively defining a DRA main lobe nearest a DRA boresight and a set of grating lobes nearest the DRA main lobe. The plurality of elements comprises: a first row of elements extending in a first direction', and a second row of elements, parallel to the first row of elements, the second row of elements offset from the first row of elements in the first direction by a stagger distance S. Each element of the first row of elements is spaced apart from an adjacent element in the first row of elements by a distance V; and each element of the second row of elements is spaced apart from an adjacent element of the second row of elements by the distance V and the second row of elements is spatially displaced from the first row of elements in a direction perpendicular to the first direction by a distance H. The stagger distance S divided by the distance V is between 0 and 1 (figure 2). The first

direction is tilted from a Nodh direction by a tilt angle between 0 and 90 degrees (figure 1b). The plurality of elements comprises: a first row of elements extending in a first direction', a second row of elements, parallel to the first tow of elements', a third row of elements, parallel to the first row of elements and the second tow of elements', wherein the second row of elements is disposed between the first row oi elements and the third row of elements', and wherein the second row of elements is offset from the first row of elements in the first direction and the third row of elements is offset from the first row of elements in the first direction by a stagger distance S that varies as a non-linear function of a distance from the first row of elements extending in a second direction perpendicular to the first direction (figure 2). The distance from the first row of elements is D and the function is proportional to D (figure 2). The first direction is tilted from a North direction by a tilt angle (figure 1b).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5,6,8-13, and18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraser (cited above).

The Fraser reference teaches every feature of the claimed invention, excluding $S=0.45V, H=V=3.75\lambda$, the tilt angle being equal to 14 degrees, $S=0.496V, H=V=3.89\lambda$,

$H/V \neq 1$, $H/V = 1.525$, or $V=3.54\%$, or $H=5.4\lambda$.

It would have been an obvious matter of design choice to provide Fraser with $S=0.45V$, $H=V=3.75\lambda$, the tilt angle being equal to 14 degrees, $S=0.496V$, $H=V=3.89\lambda$, $H/V \neq 1$, $H/V = 1.525$, or $V=3.54\lambda$, or $H=5.4\lambda$, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

Allowable Subject Matter

6. Claims 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: none of the cited art discloses the step of computing H, V and S from a relationship between the angular position of a plurality of grating lobes and the parameters H,V,S, and a wavelength λ of a signal emitted by the DRA comprises the steps of: defining a triangle formed by a centroid of a first element in the first row of elements, a centroid of a second element in the first row of elements adjacent the first element, and a centroid of a third element in the second row of elements, the third element adjacent the first element in the first row of elements and the second element in the first row of elements', scaling the triangle by a scale factor $C = \lambda / (V.H)$; and determining the angular position of the grating lobes from the vertices of the scaled triangle.

Response to Arguments

8. Applicant's arguments filed September 06, 2005 have been fully considered but they are not persuasive.

In response to applicant's argument that Fraser does not teach the grating lobes being angularly displaced from the main lobe by a grating lobe angle that varies asymmetrically about the DRA main lobe, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patently distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Since Fraser does show all claimed structure, including the plurality of elements comprising: a first row of elements extending in a first direction, and a second row of elements, parallel to the first row of elements, the second row of elements offset from the first row of elements in the first direction by a stagger distance S, each element of the first row of elements is spaced apart from an adjacent element in the first row of elements by a distance V (figure 2), the 102 (b) rejection is proper.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

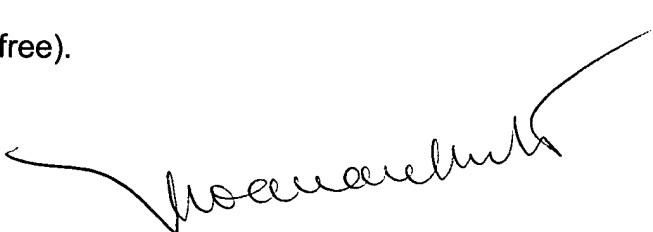
Art Unit: 2821

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HoangAnh T. Le whose telephone number is (571) 272-1823. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoanganh Le
Primary Examiner